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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2018-08-30-02** **Date: 02-09-18**
Customer	:	Assistant Executive Engineer, T.Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T.Dasarahalli Sub Division, BBMP, Bangalore
Project Name	:	Improvements to roads and drains at between 5th main & 6th cross roads Manjunatha Nagara in Ward No.14 Bagalagunte
Agency	:	Technical Manager West, K.R.I.D.L, Project Implementation Unit, No.280, 59th Cross, 17th C Main road, 3rd Y Block, Rajajinagar, Bangalore-560010
Customer Reference	:	BBMP/EE/DD/WO/76/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	30-08-18
Sample ID No	:	2018-08-30-02/01
Type of Mix	:	BM (Bituminous Mecadam)
Date of test	:	30-08-18

The results of the tests conducted on the Bituminous Macadam mix sample are as follow

SLNo	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	11.29	11.82	9KN(Min)
2	Marshal flow at 60°C, mm	3.54	3.87	2-4
3	Percent air Voids	4.56	4.17	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14.54	14.76	13-15
5	Percent Voids filled with Bitumen(VFB %)	68.98	70.28	65-75
6	Density, g/cc	2.42	2.40	-

Note:-

The results pertain to the samples received and tested.
All information Furnished by Customer/ Representative
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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL Pro BANGALORE Sig Date

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TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BM
(IS 2386:(Part 1) 1963 (RA2011)

Date: 06-09-18

Lab ID	:	CP-RW-2018-09-05-03
Customer	:	Assistant Executive Engineer, T.Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T.Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at between 5th main & 6th cross roads Manjunatha Nagara in Ward No.14 Bagalagunte
Agency	:	Technical Manager West, K.R.I.D.L, Project Implementation Unit, No.280, 59th Cross, 17th C Main road, 3rd Y Block, Rajajinagar, Bangalore-560010
Customer Reference	:	BBMP/EE/DD/WO/76/2017-18
Source of Sample	:	Sample supplied by Agency
Date of Receipt	:	05-09-18
Sample ID No	:	2018-09-05-03/01
Type of Mix	:	BM (Bituminous Macadam)
Date of test	:	05-09-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	483.5	482.5
3	Bitumen percentage	$\frac{A-B}{A}$ X 100	3.3	3.50
4	Average percentage	%	3.40	

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Weight of Sample	:	400.0	Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading 2)
26.5	0	0	0.0	100.0	100
19	28	28	7.0	93.0	90-100
13.2	147	185	38.0	62.0	56-88
4.75	191	376	77.8	22.2	16-36
2.36	28	404	80.4	16.4	4-19
1.0	32	436	90.2	9.8	2-10
0.075	31	467	96.6	3.4	0-8

Weight of Sample	:	400.0	Grams

IS Sieve Size (mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specification Limits as per MORTH specification Table 500-7(grading 2)
26.5	0	0	0.0	100.0	100
19	28	28	7.0	93.0	90-100
13.2	147	185	38.0	62.0	56-88
4.75	191	376	77.8	22.2	16-36
2.36	28	404	80.4	16.4	4-19
1.0	32	436	90.2	9.8	2-10
0.075	31	467	96.6	3.4	0-8

Note:-
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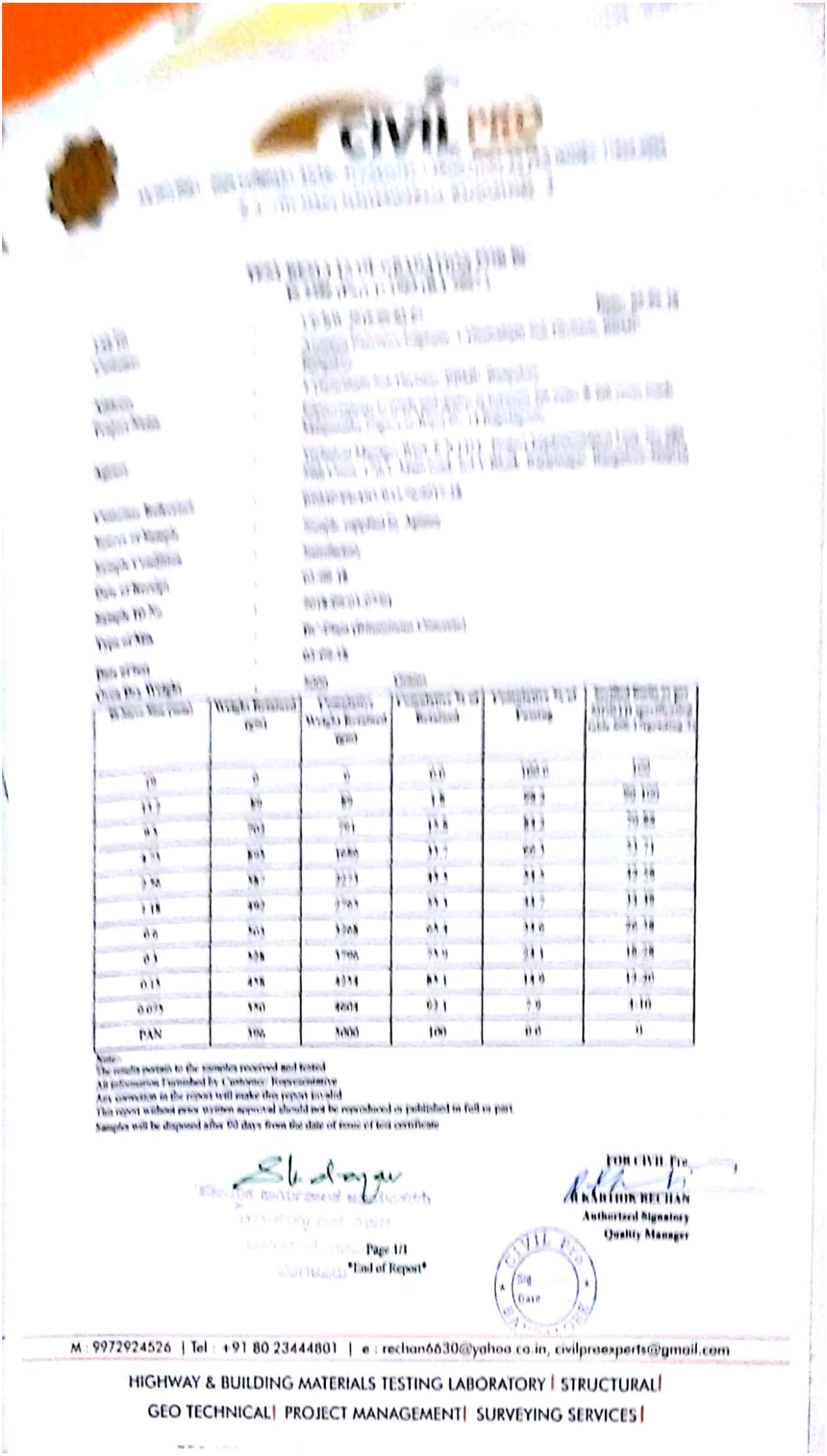

	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % Passing	
19	0	0	0.0	100.0	100
13.2	89	89	1.8	98.2	90-100
9.5	701	791	15.8	84.2	70-88
4.75	893	1684	33.7	66.3	53-71
2.36	838	2523	50.5	49.5	37-54
1.18	892	3415	68.3	31.7	21-39
0.6	503	3918	78.4	21.6	9-28
0.3	528	4446	89.0	11.0	0-20
0.15	458	4904	98.1	1.9	0-10
0.075	150	5054	101.1	-1.1	0-10
PAN	396	5450	109	0.0	0

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Certificate No : TC- 8249

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Date: 06-09-18

Lab ID	:	CP-RW-2018-09-03-07
Customer	:	Assistant Executive Engineer, T.Dasarahalli Sub Division, BBMP, Bangalore.
Address	:	T.Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at between 5th main & 6th cross roads Manjunatha Nagara in Ward No.14 Bagalagunte
Agency	:	Technical Manager West, K.R.I.D.L, Project Implementation Unit, No.280, 59th Cross, 17th C Main road, 3rd Y Block, Rajajinagar, Bangalore-560010
Customer Reference	:	BBMP/EE/DD/WO/76/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03-09-18
Sample ID No	:	2018-09-03-07/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	03-09-18

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	13.57	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	8.75		
Strength	Aggregate Impact Value	23.19	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.61	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.62	Maximum 2%	IS:2386 Part III

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TEST REPORT OF AGGREGATE STRIPPING VALUE OF BITUMINOUS MIXTURE (BC-II)

Lab ID	:	[redacted] Date: 30.08.18
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore
Address	:	Yelahanka Sub Division, BBMP, Bangalore
Project Name	:	Improvements to roads and drains at Ishwarya Ch. main & Ch. cross road, Muthyalatha Nagara in Ward No.18 Bangalore
Agency	:	Technical Manager, M/s. B.R.D.L., Project Implementation Unit, No.180, 19th Cross, 17th C Main road, 3rd T Block, Rajajinagar, Bangalore-560010
Customer Reference	:	BBMP/YA/EE/ADE/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	03.09.18
Sample ID No	:	2018-09-03-0751
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	03-09-18

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500.8
1	96.7	3.3	97.7	Minimum Retained Coating 95%
2	97.8	2.2		
3	98.7	1.3		

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	CP-RW-2018-09-03-07
Customer	:	Assistant Executive Engineer, T Dasarahalli Sub Division, BBMP, Bangalore. Date: 06.09.18
Address	:	T Dasarahalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to roads and drains at Services 5th main & 8th cross road Margosatha Nagara in Ward No 14 Bagalagunte
Agency	:	Technical Manager West, K.R.I.D.L. Project Implementation Unit, No 280, 5th Floor, 17th C Main road, 3rd T Block, Rajajinagar, Bangalore 560010
Customer Reference	:	BBMP/EE/DD/WO/76/2017-18
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	03-09-18
Sample ID No	:	2018-09-03-07/01
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	03-09-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

SLNo	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C, KN	10.83	11.66	10KN(min)
2	Marshal flow at 60°C, mm	3.78	3.49	2-4
3	Percent air Voids	4.50	3.68	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.40	13.93	13-15
5	Percent Voids filled with Bitumen(VFB %)	73.82	70.96	65-75
6	Density, g/cc	2.25	2.26	-

Note:-

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